

PRELIMINARY WORKING REPORT

Developing Parking Policies to Support Smart Growth in Local Jurisdictions: Best Practices

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I. Introduction

All around the San Francisco Bay Area, cities are working with their communities, transit agencies, and developers to create vibrant, walkable, mixed use, transit oriented places, and give people a choice in lifestyle and travel mode to meet their needs. One of the key issues encountered has been how to create a transportation system and policies to support this vision – including how to define parking policies that support this type of development. Many communities are looking for examples and best practices of approaches.

A fundamental rethinking of parking policies would look to remove financial bias toward the use of the automobile, particularly in areas where the public has invested in high quality transit. This rethinking includes support for walking, biking and transit use, particularly in the areas immediately around transit stations, movement toward market pricing of parking, and removal or reduction in public requirements for parking.

There are a number of communities that have developed and implemented approaches to parking policies that support infill, transit-oriented development, and downtown development. This report will explore some of these key approaches and provide identifying “Best Practices” and innovations from the Bay Area and beyond to help local jurisdictions in the Bay Area to define and implement parking policies and practices that support smart growth/Transit Oriented Development (TOD). The key is to combine TOD with parking policies and develop the right mix of strategies, recognizing that each community must go through its own process to move forward.

Parking and Transit Oriented Development

Local jurisdictions, developers and land owners are recognizing the potential opportunities associated with TODs and TOD parking issues.

- Local jurisdictions and developers are recognizing the potential opportunity with TOD and transit.
- Municipalities can create walkable downtowns and streetscape programs with shared parking programs, demand-based parking requirements, parking maximums, and reducing or even eliminating parking requirements.
- Cities are recognizing the economic cost of parking and its impact on land development.
- Many cities are reducing the number of free parking spaces and starting to use parking pricing programs.

TOD encourages the use of public transportation. TOD (White, 1999) has five characteristics:

- Density
- Residences, jobs and retail destinations close to public transit facility
- Mixed use within walking distance
- Built on an urban transportation network

- Urban design guidelines and design features that encourage a more pedestrian friendly environment.

TODs can result in a significant decrease in the demand for parking spaces.

In an analysis of 12 housing projects near BART stations, Dr. Robert Cervero (1996) found that TODs had an average of 1.66 people and 1.26 vehicles per household compared to 2.4 people and 1.64 vehicles for households located in the same census tract, reducing parking per household by 23% and concluded that residents actively choose to live in TOD locations that offer transit accessibility to job sites.

Another reason to look at reducing parking as part of TODs is that it results in a significant cost savings. Typically, the last 15 percent of parking spaces constructed produce less income per space and cost more than average to build (Kodama, Willson, & Francis, 1996). In a Caltrans study on Parking and TOD (Boroski et al 2002), an analysis of eleven selected TOD sites suggest that it is possible to reduce parking anywhere from 12% in San Diego (Uptown District), 20% to 34% in Pleasant Hill up to 60% in Long Beach (Pacific Court). If a project can save 500 spaces (one parking garage) at \$25,000 per space, the developer will benefit from a \$12.5 million reduction in parking construction cost.

Parking Policy and Parking Management

In the past, the defacto parking policy required the provision of plentiful off-street parking supply and support for the provision of free parking. This policy has been challenged by studies that examine actual parking occupancies and reveal the hidden costs of free parking. As a result, these parking policies created too much parking, encouraged urban sprawl and became part of local zoning ordinances and standard developer business practices.

The last decade has seen the largest amount of change in parking ordinances, policies and other regulation. However, changes in local practices have not been uniform and tended to occur in cities that encounter challenges in implementing the planning vision brought about by traditional parking requirements.

Reforming parking policy requires that cities address issues that arise for stakeholders. For example:

- If a jurisdiction lowers their parking requirements then the development and lending community will need to be shown the high value of similar developments around transit and the viability of lower parking ratios.
- If communities reduce parking requirements and implement parking pricing, residential neighborhoods may want spillover protection via residential permit parking districts (perhaps with some parking revenues used for community improvement).
- If cities create incentives for unbundling parking costs from rents and reducing parking requirements, projects will need to support and publicize viable and effective alternative mode options.
- If cities and development implement parking pricing programs, then there will need to be mechanisms and strategies to address spillover potential, concerns about effects on

shoppers or low income people, as well as transit improvements to handle increases in mode share.

This best practices document is intended to assist local jurisdictions in assessing the programs that best fit with their local circumstances. Cities that want to adopt innovative approaches will find willing partners among regional agencies, transit agencies, and other stakeholders.

II. Best Practices

Parking policies that support smart growth and TOD strive to maintain tight supplies of employee parking while encouraging more alternative mode trips. It can increase the person carrying capacity of the transportation system resulting in better access for customers, visitors and clients while supporting the creation of livable communities with an active and vibrant business and residential district.

Best practices range from transit oriented development incentive programs, parking requirement reductions, pricing, creation of parking districts, real-time parking availability information, enforcement and other strategies. Some cities adopt a strong shift in policies in order to support a vision for growth around a transit station or downtown, while others choose to work incrementally and then moving on to a more comprehensive approach with more aggressive strategies.

In this section, parking policies, strategies, and programs that can be used to facilitate TOD and smart growth are divided into the following categories:

- Transit/transportation demand management
- Parking requirements
- Parking pricing
- Shared use parking
- Parking management strategies, programs and technology
- Parking financing

Best Practices: Transit/TOD/Transportation Demand Management

1. Transit

Transit improvements and incentives to ride transit can help reduce parking demand. Transit improvements such as the construction of new rail lines, adding bus service, increasing hours and frequency of service help transit compete with the automobile.

Example: Lloyd District

At the time of the initiation of the planning process in the Lloyd District, the commute mode split for transit was 10%. By 1997, the transit mode split had increased to 21%. At the end of 2005, the transit share rose to 41%.

To reach this achievement, the Lloyd District (Williams, 2006) worked with local government and the transit provider to develop an aggressive transit improvement and incentive program. This included:

- Elimination of free commuter parking
- Development of aggressive maximum parking ratios
- Agreement to purchase annual employee transit passes through the establishment of the Lloyd District PASSport Program.
- Restrictions on surface parking lot development
- Design guidelines and restrictions on parking near the MAX light rail system
- New direct route transit.
- Revenue sharing of meters and transit pass sales

For businesses, the result was over 1.3 million square feet of new public/private development, a decrease in commercial office occupancy rate from 12% (2001) to 3% (2005), a decrease in parking from 3.5 spaces per 1,000 square feet to 1.95, and the removal of 1,433 commute vehicles with an estimated savings of over \$35 million in parking development costs (estimated based upon a construction cost of \$25,000 per space in the Lloyd District).

2. TOD and Parking

TOD and transit oriented development combined with changes to parking policy and parking management are creating opportunities to enhance economic vitality and revitalize communities.

Examples:

In Denver, Colorado, the Commons Parking Management Plan included shared parking, parking pricing, and a reduction in parking spaces over time to support transit oriented development tied to the availability of new light rail transit services.

Berkeley has a transit first policy and several award winning TOD projects. This includes projects that emphasize the pedestrian environment and are located near transit stations. They have car-lift systems to maximize use of parking garages, ground floor retail and commercial, and housing (affordable and market rate).

Project	Lot Size (square feet)	Units (apartments)	Density (acre)	Parking Spaces	Commercial Space (square feet)	Amenities
Bachenheimer (2004)	12,400	44 (7 low- income)	155 units	30	3,000 Office, retail	Car-lifts
Fine Arts (2004)	26,000	100 (20 low- income)	168 units	55	12,000 Theater, retail café	Car-lifts
Gaia (2004)	14,850	91 (19 low- income)	267 units	42	12,000	Car-lifts
Touriel (2004)	7,000	35	218 units	8	2,400 Florist	Car-lifts

Source: Panoramic Interests. 2006

In Oakland, California, Fruitvale is a community driven TOD project located on the BART system. It required a reduction in parking requirements and included over 100 funding sources, involving a total project cost of \$100 million with a library, clinic, senior center, retail and rental units.

Vancouver, British Columbia allows parking reductions ranging from 14% to 28% in multifamily zones near major transit stations.

City of Long Beach allows for parking reductions for new development located within 600 feet of a Blue Line transit station in the Long Beach Boulevard Planned Development District (City of Long Beach, 2005).

In Palo Alto California, Stanford West is a development with 628 apartments. The proximity of Stanford University provides workers with the opportunity for a short commute, saving 2.6 million annual vehicle miles compared to the average commuter. Stanford West residents with a “green” commute receive a 10 percent monthly rent discount. In addition, Stanford West residents are able to utilize the Stanford University shuttle service and an extensive dedicated bike path network. Those employees who desire to drive to Stanford University must pay \$51 per month (Cities 21 News, 2006).

In Santa Barbara, California, Casa de Las Fuentes (Cities 21 News, 2006) is a 42-unit affordable downtown apartment building with only 20 parking spaces that uses “green commute housing preferences” including:

- Residents who work downtown and do not own a vehicle get first priority for units.
- Parking is unbundled, with a \$50 per month rent reduction for residents who do not own a car and who work in downtown Santa Barbara.

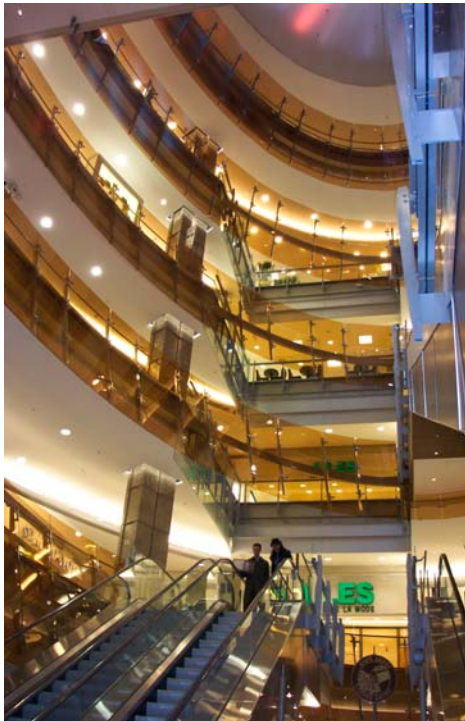
Redwood City has a vibrant mixed-use downtown with a Caltrain commuter rail station. The Peninsula Park 800 unit condominium project is a traffic reducing housing project (TRH) that will feature a 0.8 mile bikepath and a 1.4 mile shuttle bus to downtown (Cities 21 News, 2006)..

3. Transit Overlay Zones and Transit Friendly Parking Design

Transit can also be supported by the use of transit overlay zones and transit friendly parking design. In a transit overlay zone, cities can reduce parking requirements, encourage shared use and allow for density bonuses.

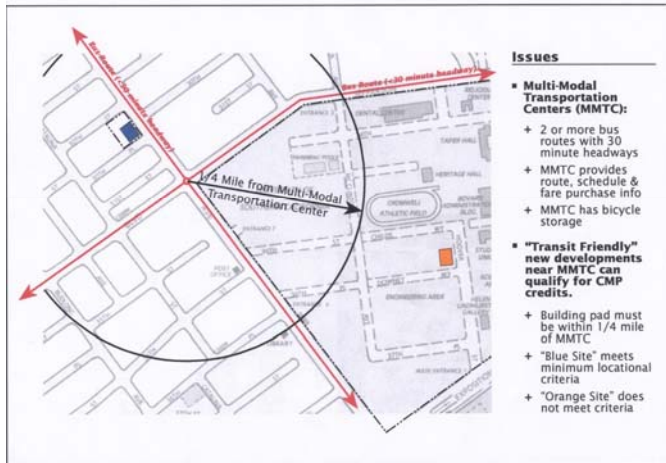
Examples:

Montreal Canada has developed an underground city that includes 10 subway stations serving 500,000 people per day. It includes 60 connections to 60 buildings which consist of 80% of the office and 35% of the commercial development in downtown Montreal. Montreal reduced parking requirements and replaced it with long term leases that link projects to the Metro, permission to occupy underground public land, laneway grants, FAR and density bonuses.



In Los Angeles, the Los Angeles County Metropolitan Transportation Authority developed transit friendly parking design credits as part of its congestion management program. It also included development credits for projects willing to implement parking pricing (Kodama, Willson, Walker Parking Consultants et al, 1997).

Proposed CMP Guidelines for Measuring Distance from Multi-Modal Transportation Centers



4. Transit Incentive Programs

Incentive programs for alternative modes, such as the "eco pass" concept used in Seattle WA, Boulder CO, Santa Clara County CA and Portland OR provide discounted low cost transit pass programs that reduce parking demand. There are shopping programs that help merchants to either validate parking or offer transit tokens to customers.

Universal transit pass programs that include the cost of transit for students, faculty and/or staff are used at universities such as the University of Washington, Cal Poly San Luis Obispo, University of California at Santa Barbara and the University of California at Los Angeles. University of California Berkeley works with AC Transit in a program that allows full-time students unlimited rides on the AC Transit system.

Seattle and Portland have "downtown free transit zones" that help customers "park once" and use transit to travel from parking facilities to downtown destinations.

Cities such as Washington DC, Boston MA and San Francisco CA have developed visitor programs and pass systems that encourage the use of transit.

Examples:

The Santa Clara Valley Transportation Authority offers ECO passes for businesses and residential communities. Employers can purchase an annual ECO pass for all full-time employees at a discounted price based upon service and number of employees. Residential communities such as condominiums, apartments, townhouses, homeowner associations and community associations can also purchase ECO passes for their residents at a discounted price. Customers can use these passes on any SCVTA bus or rail line. The use of these passes saves the user on the cost of a transit pass, increases transit ridership and results in a lower demand for parking.

In addition to successes with the use of ECO passes in Downtown Seattle, King County Metro has also experienced success in more suburban transit center environments. The Village at Overlake Station in Redmond and the Metropolitan Place at the Renton Transit Center provide bus passes for all residents. Survey results suggest that half the residents are now regular bus users (Shelton, 2003).

5. Transportation Demand Management

Transportation demand management (TDM) are demand-based techniques for reducing vehicle trips and traffic impacts. They are used to reduce single occupant vehicles, reduce parking demand while increasing the use of alternative modes. In addition to transit, TDM includes the use of vanpooling, carpooling, walking, biking, working at home (telecommuting), alternative work hours and other strategies. For example, the City of Seattle has a discounted carpool preferential program. Other incentive examples include preferential carpool and vanpool spaces in off-street lots, guaranteed ride home programs for rideshare participants, and ridematching programs. Improvements to alternative modes can reduce parking demand and be used for capital facilities, service levels, or operating policies.

Examples:

The City of South San Francisco has a Transportation Demand Management Ordinance that allows reduced parking requirements for projects that meet TDM requirements. For example, the mixed-use Bay West Cove development (EPA, 2006, City of South San Francisco, 2003) was able to reduce parking requirements by 10% in exchange for the implementation of TDM strategies including:

- Free parking for carpools and vanpools.
- Late-night taxi service and feeder shuttle service
- Transit subsidies for tenants
- Guaranteed ride home program
- Designated transportation coordinator and On-site project amenities
- Parking charges of at least \$20 per month for employee spaces.

In 1986, the City of Pasadena adopted an ordinance “Established Trip Reduction Standards in Specified Developments.” The city established policies to encourage use of transportation modes including public transit, vanpools, carpools and bicycles and alternative work hours.

In 1993, Pasadena (Ordinance 6573) revised the ordinance.

Projects that exceed 25,000 square feet must meet the following requirements.

- A minimum 10% of employee parking must be designated for carpool and vanpool vehicles.
- Bicycle parking shall be provided near the employee entrance.
- Transportation information at a location seen by the greatest number of employees.

Projects over 100,000 square feet must meet the above requirements and the following additional requirements.

- Carpool and vanpool loading area.
- Connecting sidewalks
- TSM Program that may include vanpools, transit and vanpool fare subsidies, employee paid parking, subscription bus services, alternative work hour programs, transit services, carpool and vanpools, bikeway linkages and an on-site transportation coordinator.

6. Walkability and Wayfinding

A key consideration in the development of smart growth and TOD parking strategies is the development of a walkable environment. Often times, motorists will experience a parking shortage in the immediate vicinity of their final destination while ignoring the availability of parking spaces within a short walking distance. Encouraging the creation of comfortable walking areas and linkages between parking facilities and destinations improves customer perception and brings more parking spaces into the total parking supply.

Examples:

Philadelphia PA, San Antonio TX, and Indianapolis IN have developed pedestrian wayfinding systems that make it easier for visitors to walk from parking structures to major attractions.

The City of Burbank (1992) used a combination of priority parking for customers, shared parking, employee parking pricing, and pedestrian improvements to revitalize its downtown area, creating an entertainment area with 35 restaurants, a downtown shopping center, movie theaters, anchor retailers and specialty retail shops. Pedestrian improvements create a core walkable environment and provide linkages to shared parking facilities (Wilbur Smith, Kodama et al, 2005).

The City of Glendale (Nelson Nygaard, 2006) has recognized the same issue and is making plans to create transit priority streets, improve pedestrian linkages, implement on-street paid parking and connect the off-street public paid parking system with destinations along Brand Boulevard.

7. Carsharing

Carsharing is a program that provides participants with access to a car near their work or place of residence. This program, popular in Europe, is now spreading to urban areas in the United States.

Members of carsharing programs have access to fleet vehicles. Members reserve the vehicle for hourly use. Members pay for the time they use the car.

Service is available in San Francisco, Seattle, Washington DC, Boston, Los Angeles, Oakland, Berkeley and other locations. Carsharing can be used to reduce residential car ownership, student car use, or to the size of employer car fleets.

Examples:

In San Francisco Wilbur Smith Associates in San Francisco uses car sharing instead of company cars. The San Francisco Planning Department granted a variance to construct the 141-unit

Symphony Towers apartments with only 51 spaces (rather than the required 141) in part because of the commitment for two car sharing parking spaces and the use of unbundled parking (Shoup, 2005).

Berkeley, California retired its fleet vehicles and replaced them with carsharing vehicles saving an estimated \$250,000 in the first three years of the program (KRON4, 2004; City of Berkeley, 2005).

Best Practices: Parking Requirements

1. Reduction or elimination of minimum parking requirements

Off-street parking requirements in local zoning ordinances directly affect parking supply, parking pricing possibilities, urban design, and development feasibility. Minimum parking requirements result in an oversupply of parking (Willson, 1995) and can create a “dead zone” of empty parking spaces in the middle of a commercial district or neighborhood (US EPA, 2006). In many cases, planners may rely upon neighboring cities or national handbooks to determine parking requirements (Kodama, Willson, & Francis, 1996) rather than conducting a parking study to determine the actual utilization. According to a survey of over 90% of the local jurisdictions in the South Coast Air Basin (Kodama, Willson & Francis, 1996), jurisdictions provide the follow reasons for their minimum parking requirements:

- Ensure an adequate number of spaces (35%)
- Avoid spillover onto local streets (28%)
- Avoid spillover on adjacent neighborhoods and property (7%)
- Improve traffic circulation (14%).

Linking a reduction in parking requirements to transit policy is an important first step towards developing smart growth/TOD friendly parking policies. California authorizes variances from parking requirements to encourage the use of transit (White, 1999) (See Appendix A California Government Code 65906.5). In California, Oregon and Washington, downtowns such as San Francisco, Oakland, Portland, Seattle, and Sacramento do not have a parking requirement for commercial development. Cities such as Los Angeles, Culver City, Monterey Park, Bend, Corvallis, Kirkland and Vancouver are reducing minimum parking requirements.

Professor Donald Shoup (2005) has proposed taking this further, advocating the creation of a market-based approach for parking in which on-street parking is priced to achieve about 85 percent occupancy, on-street parking revenues are used for community improvements, and off-street parking is deregulated with no minimum parking requirements. This approach provides a framework for a market-based approach to parking.

Examples:

The City of Los Angeles (2006) adopted an Adaptive Reuse Ordinance that allows existing obsolete buildings that do not meet current minimum parking requirements to convert to residential uses without adding any additional parking. Existing on-site spaces must be maintained, but may be used for any on-site or off-site use. Since 1999, this has resulted in the completion of over 6,000 housing units, with an additional 4,000 units in the planning process.

Culver City conducted a parking study and determined that they had excess parking that could be utilized for new development and now allows for parking requirements based upon predicted demand rather than formula-based parking requirements for each use. This resulted in an increase in economic activity without building additional parking spaces (Winogrand, 1996).

The City of Bend, Oregon has implemented a program that creates mechanisms for parking improvements when the on-street parking system reaches 85% occupancy.

Olympia, Washington allows a 40 percent reduction in parking in its Downtown core.

Montgomery County Maryland reduces parking requirements by as much as 20 percent (EPA, 2006).

North Hollywood has a reduced parking requirement in the redevelopment area surrounding the North Hollywood Metro Station (Boroski, 2002).

In Miami, Florida, Coconut Grove developers and property owners have a flexible parking requirement that allows for three choices: provide off-street parking, lease off-site spaces or pay an in-lieu fee of \$50 per space US EPA and Coconut Grove Chamber of Commerce 2006).

2. Parking Maximums

Parking maximums create a parking cap that limits the number of parking spaces in an urban core. Most cities with parking maximums link maximums with an alternative mode goal. Cities such as Portland OR, San Diego CA, Bellevue WA, Boston MA, Cambridge MA, Toronto, Canada and San Francisco have established maximum parking requirements for new development as part of “transit first” or auto trip reduction policies and goals.

In some cases, cities have decided that parking maximums are more effective than setting parking ratios based upon national standards. In this case, cities establish parking maximums based upon a parking utilization study. Bend OR, Hood River OR have taken this approach.

INSERT DIAGRAM

Parking requirements → Demand based parking requirements based upon local parking utilization study → Elimination of minimum parking requirements or establishment of parking maximum in correlation with transit and parking pricing

Examples:

The City of Portland, Oregon has established maximum parking requirements for new development in each central business district. There is also a parking maximum for development across the entire Portland metro area.

In Portland, parking maximums are set based upon the availability of transit service. Therefore, parking maximums are lower in central business districts and downtown due to the availability of alternative modes (transit). The parking maximum in the central downtown core is 0.7 per 1,000 square feet up to 2.5 in adjacent business districts. In more suburban areas with limited or no

transit service, the parking maximum is set as high as 3.4 per 1,000 square feet. This ratio is adjusted every five to seven years based upon available transit service in an area.

Parking maximums are also used as part of Portland's historic preservation parking policy. Older buildings have parking rights up a maximum entitlement that can be combined with other uses. This creates a market for transferable parking rights and is used for the development of parking facilities that can combine parking rights of multiple buildings (such as a hotel, retail shops and a historic office building).

Portland has no requirement for residential parking within its Central City area and imposes a residential parking maximum of 1.35 stalls per unit. Financial institutions are providing the necessary financing to make these Portland projects feasible, with an average rate of residential occupancy in downtown Portland at 97% (EPA, 2006).

Best Practices: Parking Pricing

Parking pricing concepts should be considered as an integral part of any comprehensive parking policy approach. Parking pricing is a powerful tool that can affect parking occupancy and turnover and can generate revenue for parking of community improvements. The most desirable locations in California often have parking charges.

Parking pricing can induce greater turnover of the most convenient spaces, increase parking availability, and generate revenue to fund community improvements. Parking pricing is most effective when it is combined with a comprehensive package of incentives for alternative modes, such as rail improvements, express or bus rapid transit, shuttle services, bus service, pedestrian improvements.

Examples:

Glendale, California (Nelson, Nygaard, 2006) recognizes that free customer parking on Brand Boulevard combined with off-street pricing at public structures has resulted in a lack of availability parking for customers along Brand Boulevard and a perception that the area lacks adequate parking (even though there is an abundance of off-street parking spaces located within one block of the retail core).

In 1999, Berkeley raised its all-day parking rates in public facilities resulting in a rate increase for off-street private parking facilities, a shift to alternative modes and a decrease in all-day parking demand. Currently, Berkeley California is currently considering rate changes on and off street with an eye to reducing meter feeding and shifting additional long term parkers from on-street to available off-street capacity or to alternative modes.

1. On-street parking pricing

On-street parking pricing is an integral part of parking pricing, since on-street parking conditions often drive off-street policy. Proper pricing of on-street parking is perhaps even more important than pricing of off-street parking.

The development of a successful on-street parking management system relies upon the development of a coordinated and comprehensive parking management system that prioritizes parking spaces for specific users.

On-street parking pricing and management can drive off-street policy. If the on-street price is too low, demand for these spaces will exceed price and can result in an overutilization of on-street parking spaces, violations, enforcement issues and unhappy customers. If the on-street spaces are priced too high, then demand will shift to other locations resulting in an underutilization of on-street parking resources. On-street parking pricing works best when combined with a high level of transit service.

New technology has allowed for the development of pay stations (pay and display and pay and retain). Pay stations are now being implemented in many cities throughout the United States including New York, Seattle, Portland, Long Beach, Boston, Chicago and other places. The pay stations provide financial and operational data that create more efficiency, an audit trail, real-time data and increase revenue opportunity. Pay stations allow for the use of credit cards and create the ability to use on-street variable rate parking systems that allow for higher charges for longer stays or special events.

Examples:

In Portland OR, there is a standardized approach that creates a “core area parking zone” with 90-minute meters. Portland has also established special use zone areas that allow for longer time stays based upon users and priority parkers. Parking located near Portland State University is standardized with 3-hour time limits to allow for a longer stay by its part-time student population.

Redwood City has taken the concept a step further, approving enabling ordinance that uses parking utilization as the key for on-street pricing policy. The municipal code (section 20.120) allows for the periodic adjustment of the downtown meter rates based upon a target parking utilization rate of 85%. It also includes the creation of a parking database and provision of an annual parking utilization study to adjust parking rates.

2. Variable rate parking pricing

Variable rate parking pricing can be used to encourage the use of alternative modes and discourage single occupant vehicles.

Examples:

The University of Washington has implemented a program that increases daily parking fees for commuters during a month. This also provides more affordable parking for commuters who occasionally use a car.

In New York, the variable rate parking pricing is used for on-street parking. The Mid-Town Commercial Parking Pricing Program sets on-street rates for multi-space muni-meters (pay and display) at \$2 for one hour, \$5 for two hours, \$9 for three hours and \$12 for four hours. Initial results from the program indicated a decrease in average parking time from 4 to 6 hours to 90

minutes and a reduction in occupancy rates from 120% to 85% (New York, 2006). This may also be used by cities to maintain desired occupancy rates (for example – charge a higher fee during events near special event centers). New York pay station customers can also use credit cards or NYC Parking Cards to pay for parking. Estimated revenue from this program increased from \$3.527 million (FY2004) to \$6.42 million (FY2006).

3. Off-street and on-street pricing

Off-street and on-street parking prices may also be tied together. At the same time, off-street short term parking rates are coordinated with on-street hourly rates. This encourages commuters to use alternative modes while still providing short term parking for customers.

Examples:

Aspen CO, San Diego CA, Anchorage AK, Boise ID, Hood River, OR have a parking rate structure that includes an all day off-street parking rate that is 25 percent higher than market rate in the area.

Aspen, Colorado (1999) balances on-street and off-street parking pricing policies. Aspen changed its parking pricing structure to increase the availability of prime on-street parking (short-term customers) and increase the utilization of its off-street municipal parking structures (long-term visitors and employees). Funding from parking is used to pay for parking improvements, improve streetscape and encourage the use of alternative modes (Aspen 1999).

Insert graphic

free parking → unbundled parking → parking pricing

4. Unbundled Parking

A lease is unbundled when there is a separate charge for parking and there is the flexibility to vary the number of spaces (Kodama, Willson, & Francis, 1996; Kodama & Maetani, 1998). Bundled parking is absorbed into tenant leases and hides the cost of parking. For example, rather than renting an apartment with two parking spaces for \$1,000 per month, the apartment would rent for \$800 per month, plus \$100 per month for each parking space. Or, renters are offered a discount to use fewer than average parking spaces. An apartment or office might rent for \$1,000 per month with two “free” parking spaces, but renters using only one space receive a \$75 monthly discount.

Unbundling parking is an essential step towards getting people to understand the economic cost of parking. Without unbundled parking, tenants may assume that parking is free. Unbundled parking is a critical first step necessary to implement parking pricing policies and parking cash-out. It gives the user an opportunity to opt out of parking and make decisions based upon the price of parking as a commodity rather than a free good.

Examples:

San Francisco housing units with off-street parking bundled into the unit sell for 11% to 12% more than units without parking (Jia and Wachs, 1998),

Oakland California's decision to require one parking space per apartment increased construction cost 18% per unit and decreased units per acre by 30% resulting in a 33% decrease in land value (Bertha, 1964).

The Los Angeles County Metropolitan Transportation Authority developed a policy to give congestion management program credits to projects willing to unbundle parking (Kodama, Willson, Francis et al, 1997).

Detailed Example: Market Common, Arlington, Virginia: Unbundled and Shared Parking Example (K.T. Analytics, 2006)

Residents in 300 apartment units at Market Common in Arlington Virginia have no assigned parking – spaces are “unbundled” from rent. Residents pay \$25 per month for one space and \$75 to \$100 for a second (in contrast, owners of 87 townhouses at Market Common get two parking stalls as part of purchase, no choice). Apartment residents do not buy assigned stalls. They obtain a swipe card good at garage gate that allows them to find parking in a structure shared with retail and restaurant patrons who pay hourly rates in the same structure. Retail patrons and tenants share about 1100 spaces in a parking structure, though there also is some on street parking for shoppers (36 spaces are referenced in one web page summary of the project).

Residents pay building management (not the parking operator) for swipe cards used at structure gates. Shoppers buy short term permits to access the garage (\$1-4/hr depending on length of stay, with merchant validation allowed). Because retail is at ground floor and resident units at upper floors (10 story building), residents have “learned” to go to the upper floors where parking generally is available. Residents do not seem concerned with having the structure open to non-residents, perhaps because elevators in the parking structure leading to residential areas are opened only by tenant pass key.

How's Unbundling Working Out?

According to Victoria Transport Policy Institute (Litman, 2006), parking surveys indicate up to 20% of available parking remains unused at peak time after the project was completed and fully occupied.

Arlington County under its shared use provisions allowed Market Common to build only 1100 spaces whereas normal code provisions would have required 1500 spaces. The McCaffery Interests representative indicated the 300 residential units share the 1100 parking space with 240,000 square feet of retail. Assuming Market Common generates demand for its size category as a shopping complex without significant dining and entertainment as per an average of 169 shopping centers analyzed by Urban Land Institute (See Shared Parking, ULI, 2nd Edition, Table 4-1), then shopper parking demand might be 4 spaces per 1000 square feet. If so, that is a peak demand of 960 spaces (4X240), leaving 200 space demand for 300 tenant units, below a 1:1 ratio.

Conclusion:

The unbundling code requirement used by Arlington County for Market Common has resulted in a relatively low demand for residential parking. This is probably due to “unbundling” and the ability to implement residential parking pricing.

5. Parking Enforcement

Time limits and other regulations are ineffective if not enforced. The best approach is progressive enforcement in which warnings can be given to first time violators (to avoid discouraging first time visitors to a district) with subsequent violations resulting in fines and towing. Some new technologies may aid enforcement.

Examples:

Seattle WA had an average parking duration exceeded the posted time limits of parking spaces. This indicated a lack of parking enforcement (Worth, Williams and Kodama, 2000).

The City of Santa Barbara recognized the need to create enforcement mechanisms that reduced meter feeding (90 minute shuffle) by retail employees (Lowe, 1991; JHK & Associates, McArthur & Associates, K.T. Analytics, Inc. & CH2M Hill, 1995).

GPS enabled cameras on enforcement vehicles in Monterey CA, Chicago IL and Sacramento CA scan license plates to better enforce time limits and reduce meter feeding (San Francisco Chronicle, September 5, 2006). Palo Alto CA is using a handheld version of this device.

6. Parking Cash-Out

Parking cash-out allows employees to choose between a parking subsidy or the out-of-pocket equivalent cost of the parking space. Employees may choose to apply the money towards their parking space or make arrangements to use a lower cost alternative mode and keep the cash. A study on parking cash-out summarized results from seven work sites and estimated a 26 percent reduction in parking demand (Shoup, 1992).

California AB 2109 (Parking Cash-Out) requires parking cash-out of sites with 50 or more employees in non-attainment air quality areas who provide parking subsidies, have non-owned employee parking and can reduce parking without a financial penalty.

More recent cash-out studies by Kodama et al (1996), Shoup (1996 and 1997) and Van Hattum et al (2000) expanded the definition of cash-out and provide a more flexible and broader application. The Van Hattum study involved voluntary promotion of parking cash-out and educating employers about cash-out opportunities. Within the past ten years, many employers in Downtown Portland created effective programs that eliminate free or subsidized parking while providing employees with transit passes (either PassPort or monthly pass).

Examples:

In an analysis of downtown Los Angeles commuters, Shoup and Willson (1992) estimated that parking charges can reduce parking demand by 25 percent and parking cash-out can reduce parking demand by 17 percent. They estimated that significant mode shift will occur in areas with parking costs starting at \$30 to \$50 per month.

The City of Santa Monica is the only city in California that requires compliance with the parking cash-out law. The program is part of the city's Emission Reduction Plan. There are 26 employers who participate in the program, resulting in a 20% reduction in parking utilization at these employment sites. A study conducted by Donald Shoup (1997), concluded that two Santa Monica employers who used cash-out reduced solo driving by 7 to 8 percent.

In Seattle Washington and in Indianapolis Indiana, a major national employer has established a parking cash-out program based upon the choice of paid parking or a cash equivalent business benefit. Employees can choose between a parking space or a business trip to a location with the cost equivalent of a parking space. For example, if a parking space in Seattle's Pioneer Square is valued at \$120 per month (\$2,400 per year), an employee can choose between a year's worth of parking, a trip to a business conference in Italy or a new laptop computer.

The County of Los Angeles was one of the first major employers to offer a cash-out program to its employees. This program resulted in a decrease in solo occupant drivers and allowed the County of Los Angeles to use its excess parking for other more profitable uses.

In Burbank California, an entertainment company established a parking cash-out program that provided for a choice between unreserved parking spaces, or a trip allowance that could be used for transit passes, bicycle, walking or carpool expenses.

In Downtown Minneapolis, Minnesota, American Express Financial Advisors developed a partial cash-out program (\$25 transit pass instead of the \$225 per month parking space) to increase the use of transit. This cash-out program resulted in an increase of bus rider share from 47% (October 1998) to 68% (June 2000). Since the introduction of Metropass, 3% of the executives switched to transit. This was a critical finding because many observers assumed executives would never choose to bus or pool (Van Hattum et al, 2000).

The Los Angeles County Metropolitan Transportation Authority gives congestion management program credits to projects willing to cash-out parking (Kodama, Willson, Walker Parking Consultants et al, 1997).

Downtown Seattle has parking cash-out because it has created an environment that allows businesses to cash out because it makes economic sense and serves their own self interest. Downtown Seattle has the key elements to promote cash-out including:

- Excellent transit service
- Unbundled parking leases
- Limited parking supply
- High parking prices
- Transit oriented development opportunities

Best Practices: Shared Parking

Shared parking is based upon the concept of using the same parking spaces for two or more different land uses at different times. For example, many businesses or government offices experience their peak business during normal daytime business hours on weekdays, while restaurants and bars peak in the evening hours and on weekends. This presents an opportunity for shared parking arrangements.

Shared parking can significantly improve the economics of constructing new parking by providing greater turnover in the facility – rather than one user per day a facility may service multiple users. If parking charges exist, this turnover can increase the ability to finance the facility. Allowing for shared parking arrangements significantly reduces the amount of land devoted to parking and, in so doing, creates more opportunities for creative site planning and landscaping. In addition to revisions to local zoning codes to enable shared parking, shared parking arrangements can be implemented through shared parking agreements between individual developers or the construction of public parking facilities.

Some local jurisdictions incorporate language in local ordinances to permit and even encourage shared parking. These jurisdictions allow shared parking to meet minimum parking requirements for uses located within the same lot or building and also permit off-site shared parking arrangements to meet on-site parking requirements for complementary uses within a defined area. These location requirements are typically based on acceptable walking distances.

In some cases, shared parking can be an informal or formal agreement among different peak users on different days. Shared parking arrangements can also be implemented through shared parking agreements between individual developers or the construction of public parking facilities.

Examples:

San Diego (CA) Municipal Code states that shared parking facilities must be located within 600 feet of the uses served. Eugene (OR) Municipal Code allows for a longer distance stating that required off-street parking facilities must be within 1320 feet of the development site that the parking is required to serve. Los Angeles CA allows for 1,500 feet.

In Ashland, Oregon, and in Indio, California, the city shares its parking resources to address seasonal parking shortages during its annual festival season.

Detailed Example: Shared Parking – Montgomery County, Maryland

The Montgomery County Zoning Ordinance allows for shared parking when any land or building is under the same ownership or under a joint use agreement and is used for 2 or more purposes. The uses being served by the shared parking arrangement must be within a 500 feet walking distance of the shared parking facility. The following is a generalized example (Zimble, 2002).

The calculations are based on a development project with general retail and office uses. The retail use has a gross floor area of 100,000 square feet and the office use has a gross floor area of

100,000 square feet. The development is located in the designated Southern Area of Montgomery County and is located 1,000 feet from a Metro station.

Given this location, the minimum amount of parking normally required for a retail use is 5 spaces per 1,000 square feet gross floor area and the minimum requirement for an office use is 2.1 spaces per 1,000 square feet gross floor area. The following table summarizes the calculations. The “percentage of parking requirement column” is based on the parking credit schedule in the Montgomery County Zoning Ordinance

For this example, the minimum parking requirement for the shared parking arrangement is 521 spaces since that is the maximum number of spaces across the five time periods. This is significantly less than what would otherwise be required, 710 spaces, if shared parking were not permitted—a 26% reduction in the minimum parking requirement.

	Minimum Parking Requirement	OFFICE USE Percentage of Parking Requirement	Adjusted Parking Requirement	Minimum Parking Requirement	RETAIL USE Percentage of Parking Requirement	Adjusted Parking Requirement	Parking Requirement by Time Period
Weekday Daytime	210	100%	210	500	60%	300	510
Weekday Evening	210	10%	21	500	90%	450	471
Weekend Daytime	210	10%	21	500	100%	500	521
Weekend Evening	210	5%	10.5	500	70%	350	360.5
Nighttime	210	5%	10.5	500	5%	25	35.5

Best Practices: Parking Management Strategies, Programs and Technology

Parking management strategies, programs and technology can be used to best use parking resources and support the use of transit. These strategies impact land use patterns and transportation demand (Kodama & Willson, 2000, Willson, 2005). The following strategies, programs and technology can enhance smart growth and TOD opportunities.

1. Conversion of long term parking to short term uses and development of priority parkers

Identification of target markets for parking is an important consideration. Often, this includes development of priority users of parking resources and may involve the conversion of existing long term parking to short term uses. This increases the productivity of existing parking spaces by increasing the number of person-trips served per space. The most effective conversions require a strategic and phased approach that includes investments in alternative modes before removal of long-term commuter parking.

Examples:

Portland, Oregon, Boise, Idaho, Anchorage, Alaska and Vancouver, Washington have and developed priority parker profiles and converted long term parking to short term uses.

Vancouver, Washington and Portland Oregon have strategically purchased land and built new public supply that is used solely for short-term customer parking.

2. Parking Payment Technology

Rapid development in pay station technology is providing options for variable pricing, more user convenience and better intelligence for parking system managers. Many cities are considering of pay stations that accept bills, increase parking supply and increase revenue. Examples include Seattle, Washington and New York, New York.

Example:

In 2004, the City of Seattle began replacement of single space meters with a multi-space pay and display system, per space parking revenue with the same fee has increased 40% due to the propensity of motorists to use credit cards (62% of parking revenue) to purchase the maximum parking period allowed and avoid a parking ticket.

3. Parking database

Development of a comprehensive on-street and off-street database of parking allows for better use of parking resources and gives local jurisdictions the ability to develop programs based upon a more accurate assessment of parking utilization. While current efforts involve regular surveys, there is the opportunity to use parking technology and sensor equipment to provide real-time parking information. Cities are looking at the feasibility of creating this type of database.

Example:

Downtown Seattle has a parking database. Downtown Seattle has limited parking (54,063 spaces) to support an employment base of 181,807 jobs. The overall central business district peak-hour occupancy rate of 76.8% indicates that parking is generally well used in Downtown Seattle (King County Metro, 2001). In Downtown Seattle, monthly rates vary from \$38 to \$275 (PSRC, 1999), with an average monthly rate of about \$174 (King County Metro, 2001). Daily rates range from \$21.50 per day to as low as \$3.00 per day, with an average at \$14.39 per day.

4. Real-time Parking Information

Real-time parking information, guidance and wayfinding systems make it more convenient to find parking. These systems range from guidance given in the garage itself as to the location of available spaces to coordinate guidance systems that provide directions to the appropriate parking garage and guidance within that facility. Often districts have sufficient total supply of parking, but use portions of the inventory inefficiently. Some cities have electronic wayfinding guidance systems as they enter a district. Both improve traffic circulation and efficiency of the parking system.

Example:

BART, Portland International Airport, Baltimore International Airport and the Grove in Los Angeles have parking systems that use dynamic signs to communicate stall availability to motorists.

Best Practices: Parking Financing

The development of parking is not free. Constructing parking spaces cost anywhere from \$8,000 per space for a suburban surface parking lot to \$60,000 per space for an underground parking facility (construction and land cost). Pacific Place parking garage in Downtown Seattle had a per stall cost of \$61,000 (Seattle Post Intelligence, 1998 and Washington State Department of Transportation, 1999).

To determine the cost of parking, consider the facility's annual income, operating costs, amortization rate, land costs and construction costs. The cost of parking also needs to consider the best use of land. For infill locations, the opportunity cost can be very high. The Transportation and Land Coalition (2002) estimates that on-site parking spaces in the Silicon Valley can reduce the number of housing units by 25 percent or more.

When strategies are used that reduce costs, everyone benefits and the savings can be passed on to property owners and tenants. This is particularly true for larger parking facilities. The last fifteen percent of parking spaces usually produce much less income per space, have a lower utilization rate and generally are well above the average costs to construct (Kodama, Willson & Francis, 1996).

There are many parking finance options. Parking facilities can be funded by private sector financing, bonds, grants, tax revenues or other obligations (Urban Land Institute, 2000).

Some examples of creative parking financing methods are described below.

1. Parking District

Parking revenues can be used to build parking facilities, enhance streetscape and improve transit service. Typically, a parking district will collect revenues from parking meters, residential permits and other parking revenue sources. California cities such as Pasadena, Palo Alto, Beverly Hills, Riverside, Redondo Beach, Sacramento and San Diego have created parking districts that use the revenue to improve the local neighborhood.

Examples:**Old Pasadena Business Improvement District**

The Old Pasadena Business Improvement District (BID) in partnership with the City of Pasadena is designed to reinvest parking revenues in the district. The BID Board consists of business and property owner who set spending priorities based upon the zone's parking meter revenues. The first project was the Old Pasadena Streetscape and Alleyways Project. This \$5 million project updated street furniture, trees, tree grate and historic lighting fixtures. Since then, the BID has

relied upon this funding source for its own street sweeping, trash collection, graffiti removal and sidewalk cleaning program.

Lloyd District Meter District

The Lloyd District meter district includes nearly 2,000 metered stalls serving a mixed-use business center in Portland, OR. Established in 1997, revenues from the meters can be used to fund transportation improvements and programs such as:

- Extension of the Fareless Square for transit service connecting the Lloyd District and Downtown Portland;
- Operating funds for the Lloyd District Transportation Management Association;
- Pedestrian improvements including sidewalks, intersection crossings and lighting.
- Signage and wayfinding systems.

Downtown Tempe Community (DTC)

DTC is a non-profit business association in Tempe Arizona that is funded through a business improvement district. The DTC manages on-street parking in Tempe's central business district. DTC now manages over 95 percent of the public and private parking, including on-street parking in its service area.

Downtown Management Commission

In Boulder, Colorado, the Downtown Management Commission manages on and off-street parking. It collects parking revenues from garages, meters and in-lieu parking fees. These revenues are used to provide free universal transit passes, guaranteed home services, ridematching, bicycle parking and other benefits.

2. Fee-In-Lieu

In some cities, developers are allowed to buy out of minimum parking requirements. This fee is set at a level below the cost of constructing parking spaces and can be used to fund future parking facilities. More creative cities also use this fund to pay for other transportation improvements in the project area. It can often be a favorable solution for the redevelopment of older and historic properties and can be used to develop shared parking facilities.

Examples:

Pasadena has used fee-in-lieu funds to pay for various transportation improvements in Old Town Pasadena.

Miami FL, Bend OR, Corvallis OR, Chapel Hill NC and Orlando FL have similar types of fee-in-lieu programs.

3. Risk Fund

Development of a risk fund to guarantee revenue for short-term parking lot owners/operators. Owners of these facilities may be guaranteed levels of revenue in exchange for agreeing to provide short term parking.

Example:

Seattle WA (2006) is using this strategy to increase short-term parking supply and discourage commuter parking as part of the Alaska Way Viaduct and Seawall Replacement Mitigation Program.

4. Tax Exemptions and Variable Rate Tax

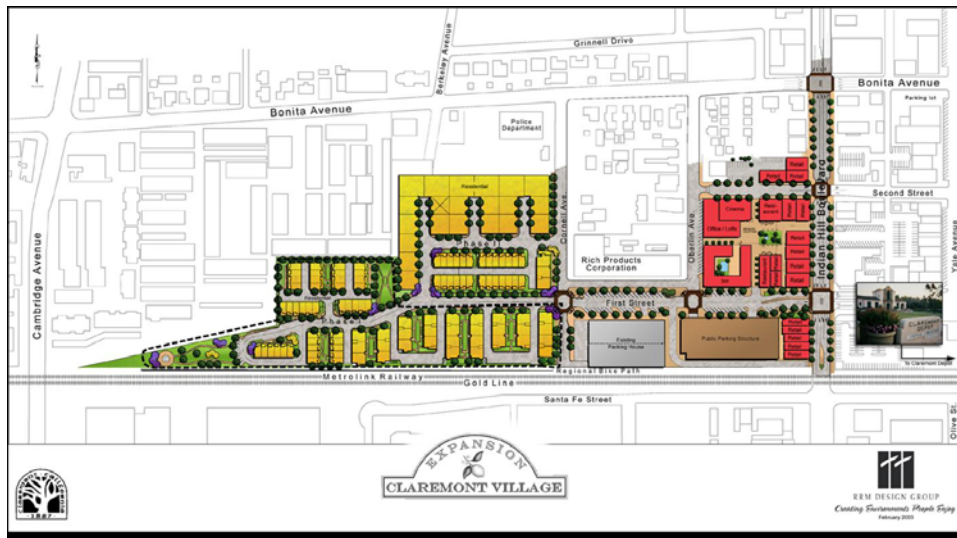
Some cities are looking at the feasibility of providing special discounts on taxes to parking owner/operators who allow access to their parking for specific priority users (such as short-term customers). They are also looking the feasibility of a variable rate parking tax based on parking type and fee level.

5. Grants

There are various grants available that can fund planning or construction of parking facilities. This is more likely to occur with projects that include TOD or joint development opportunities.

Examples:

The City of Claremont California (Kodama, 2005) funded this project using local funds and an FTA grant. This suburban community is developing a transit-oriented village consisting of 35 acres with over 200 new high-rise residential units with reduced parking requirements and over 150,000 square feet of retail, commercial and office space. As part of the project, the City of Claremont is consolidating new parking into a single 477 space parking facility that will be used to support transit-oriented development and the Claremont Intermodal Regional Transportation Center. Parking is prioritized for transit users and retail customers.



Best Practices: Combining Strategies

Typically, the most successful examples combine strategies and build upon past successes.

The Long Beach Downtown Parking Management Plan allowed shared use parking and in-lieu fees to reduce parking requirements for the D'Orsay Hotel project from 302 spaces to 162 parking spaces, 47 percent less than required. This saved \$2 million in construction cost and provided new development in Downtown Long Beach that adds \$300,000 in new tax revenue annually (US EPA, 2006).

The City of Los Angeles is currently in the final stages of development of a parking management framework that includes a toolbox of strategies and programs: INSERT LOS ANGELES RECOMMENDATIONS (available in Late November)

INSERT MTC PROJECTS

III. Conclusion

Combining approaches – best in combination –

Toolbox assist in development in own area

Important approaches –

Create incentives to encourage the use of TOD and creative parking policy and parking management strategies

Create a walkable environment and encourage the use of smart growth urban design and transit friendly parking design

Reduce or eliminate parking requirements

Create opportunities for shared parking

Encourage unbundled parking to create an environment for parking pricing and parking cash-out

Utilize parking districts to encourage market rate parking pricing and creative parking financing for neighborhood improvements

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Appendix A: California Government Code 95906.5

California Government Code 65906.5. Notwithstanding Section 65906, a variance may be granted from the parking requirements of a zoning ordinance in order that some or all of the required parking spaces be located offsite, including locations in other local jurisdictions, or that in-lieu fees or facilities be provided instead of the required parking spaces, if both the following conditions are met:

- a) The variance will be an incentive to, and a benefit for, the nonresidential development.
- b) The variance will facilitate access to the nonresidential development by patrons of public transit facilities, particularly guideway facilities.